REMARKS

1. The Final Office Action has rejected Claims 1 - 3 under the provisions of 35 U.S.C. §112, second paragraph, as being incomplete for omitting essential elements, such as a positive structure connected to the turbine mixer to permit the introduction of cement and water into the chamber. This rejection is respectfully traversed.

In response, Applicants would direct the Examiner's attention to the amendments to Claim 1 to provide additional structure defining a turbine mixer to pre-mix the cement and water into a cement paste before introduction into the mixing auger of the mobile concrete production apparatus. Applicant respectfully submits that these amendments overcome the rejection under Section 112 and respectfully requests that this rejection be reconsidered and withdrawn.

2. The Final Office Action has rejected Claims 33 – 37 and 46 under the provisions of 35 U.S.C. §102(b) as being anticipated by U. S. Patent No. 3,502,305 (Grun). The Final Office Action states that Grun discloses a mixing chamber into which is fed dry material, a mixing plate dividing the chamber into an inner and outer chamber with an annular gap with fins 8 breaking up liquid from nozzles 11, 12 to provide a slurry mixture, the fins being mounted up to the edge of the outer periphery of the disc surface. This rejection is respectfully traversed.

Applicant would direct the Examiner's attention to the amendments to independent Claims 33 and 46 in which the mixing chamber has been defined as having an axial or central inlet opening through which the dry cement and water are fed into the inner chamber of the mixing chamber. Furthermore, both independent Claims 33 and 46 have been amended to

specify that the agitating fins are operable within the inner chamber to create the cement slurry that is discharged to the outer chamber for further mixing and discharge from the mixing chamber. Applicant respectfully submits that the Grun reference cannot meet or make obvious these structural limitations.

Grun is a mixing device that operates differently than the turbine mixer of the instant invention. The Grun apparatus receives a granular material through a central or axial opening via a conveying device where a conical distribution chute directs the granular material outward toward the periphery of the distributor disc. Liquid is added to the granular material via inlet ports aligned with the circumferential portion of the distributor disc so that the granular material has the liquid added to it before falling off the edge of the distributor disc into engagement with a set of vertical vanes affixed to the underside of the disc to affect some mixing of the granular material and liquid before being discharged out the central outlet opening at the bottom of the housing. This Grun apparatus would not be effective to hydrate dry cement and create a cement paste or slurry.

With respect to amended independent Claims 33 and 46, as well as the claims respectively dependent therefrom, the Grun mixing apparatus does not feed the dry material and the water through the central inlet opening and Grun has no agitator fins on top of the distributor disc that are operable to mix the dry material and liquid to create a paste or slurry before being discharged from the inner chamber past the distributor disc. Accordingly, Grun cannot anticipate and cannot make obvious Applicant's turbine mixer defined by amended independent Claims 33 and 46.

In view of the amendments made to Claims 33 and 46, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

3. The Final Office Action has rejected Claims 1 – 7 and 40 – 42 under the provisions of 35 U. S. C. §103(a) as being unpatentable over Grun in view of U. S. Patent No. 4,406,548 (Haws). The Final Office Action states that Grun discloses a turbine mixer as defined within the claims and that Haws adds the mobile frame that carries a mobile concrete production system. The Final Office Action concludes that it would be obvious to provide the mixer of Haws with a device of Grun so that the slurry produced by the Grun device may be more easily transported to the jobsite. This rejection is respectfully traversed.

Applicant would have the Examiner note that the turbine mixer incorporating the principles of the instant invention is intended to premix two of the components, namely dry cement and water, that are used to make concrete, such is accomplished by the mobile machine depicted in the Haws reference. The turbine mixer atomizes the dry cement and water into very fine particles that start the hydration process immediately in the turbine mixer. Conventional mobile concrete production machines, like the Haws machine, which are often referred to as a volumetric concrete mixer, typically convey requisite quantities of cement, water, aggregates, and sometimes other additives into a mixing auger where the materials are combined to create a desired quantity of a concrete mix.

With Applicant's turbine mixer, the dry cement and water are premixed in such a way as to begin the hydration of the cement well before the cement paste or slurry is introduced into the mixing auger to be combined with the aggregates to create concrete. Tests have shown a greatly reduced cure time for concrete mixes formed with the addition of a cement slurry created by Applicant's turbine mixer. It should be noted that while the preferred use of Applicant's

turbine mixer is in conjunction with the mobile volumetric concrete mixer, other concrete mixing systems can also utilize this technology.

Accordingly, Applicant intends for the turbine mixer to be carried on a mobile volumetric concrete mixer, such as is represented by Haws, but not to replace the mixing auger where the concrete mix is created. Applicant's turbine mixer is an improvement to this type of mobile concrete mixer in which the dry cement and water are premixed before being added to the mixing auger

Applicant would direct the Examiner's attention to the amendments to independent claims 1, 10 and 33 to overcome the cited prior art reference. In Claim 1, the turbine mixer is defined as having a mixing chamber supported on the mobile concrete production apparatus and a mixing member supported within the mixing chamber to mix the cement and water into a cement paste. Applicant admits that the Williams apparatus is a mixer that pre-mixes a batch of cement and a batch of water to create a cement slurry to be discharged from the mixing apparatus into a ready-mix concrete truck, which, in turn, transports the mixed concrete to a job site for dispensing. Williams contains no teaching or suggestion for a turbine mixer that can be supported on the ready-mix truck to provide a pre-mix cement paste for addition to the aggregate carried in the concrete drum. Accordingly, Applicant respectfully submits that the improvements to a mobile concrete production apparatus to incorporate a turbine mixer to pre-mix cement and water to make concrete cannot be met by the cited Williams reference.

With respect to amended Claim 10, the turbine mixer is defined as including a mixing chamber divided into first and second chambers by an intermediate mixing plate that receives the dry cement and water in the first chamber for mixing into a cement slurry that is

discharged from the first chamber to a second chamber through an annular gap between the mixing plate and the mixing chamber for further mixing and discharge from the mixing chamber. As noted below, Williams contains no such structure and cannot meet or make obvious the turbine mixer defined in amended independent Claim 10.

Independent Claim 33 has been amended to specify that the turbine mixer includes a mixing chamber divided into inner and outer chambers on opposing sides of the intermediate mixing plate that has a plurality of agitating fins rotatable at high speeds to break-up cement and water into fines particles for mixture into a cement slurry, the mixing plate conveying the cement slurry from the inner chamber to the outer chamber before being discharged from the mixing chamber. Applicant respectfully submits that the Williams reference, as described below, contains no such structure and cannot meet or make obvious the invention as defined by amended independent Claim 33.

Applicant would direct the Examiner's attention to the addition of new independent Claims 40 and 46 to the application. Claim 40 defines an improvement to a mobile concrete production apparatus carrying supplies of aggregate, cement and water to be combined into a mixing auger to create a concrete mixture in the provision of a turbine mixer supported on the frame of the concrete production apparatus to provide a continuous supply of pre-mixed cement slurry into the mixing auger while concrete is being produced therein. Independent Claim 46 defines a turbine mixer that includes a mixing chamber divided by the mixing plate such that the inner chamber receives a continuous metered supply of cement and water to create a pre-mixed cement slurry while the concrete production apparatus is producing concrete.

Applicant respectfully submits that the Williams reference teaches the mixing of discrete batches of cement and water for adding to a ready-mix concrete truck after the cement

and water are pre-mixed. The Williams apparatus is essentially a huge blender with a rotatable blade mounted at the bottom of the blender cavity to stir the cement and water into a slurry. The Williams blade had stirring fins positioned on one side and is not operable to divide the blender cavity into two separate chambers as the backing support is located at the very bottom of the cavity. Furthermore, there is no teaching of the Williams blade conveying the slurry from one side of the blade to the opposing side of the blade, i.e. from one chamber to another, for continued mixing and then discharge from the second chamber. The Williams blade simply stirs the slurry and then discharges the slurry laterally when the batch is needed for placement in the ready-mix drum. Williams contains no teaching or suggestion whatsoever for a turbine mixer that can be supported on the mobile concrete production apparatus or one that can provide a continuous supply of pre-mixed cement slurry for the production of concrete from continuous supplies of cement and water being provided into the inner chamber of the turbine mixer.

The respective dependent claims corresponding to independent Claims 1, 10, 33, 40 and 46 provide additional structural limitations defining Applicant's invention in terms of varying scope. For example, Williams contains no teaching or suggestion for a mixing plate mounted in a mixing chamber such that there is an annular gap between the mixing plate and the mixing chamber through which the cement slurry passes from one chamber to the other. Williams contains no teaching or suggestion for agitating blades mounted on the circumference of the mixing plate, of radially extending blades to direct cement slurry outwardly toward the annular gap, of fixed pegs mounted in the first or inner chamber to be cooperable with the agitating fins to break up cement and water into fine particles for better hydration of the cement in the creation of a cement slurry. Williams contains no teaching or suggestion for a discharge opening on the second or outer chamber cooperable with an adjustable slide plate that is movable

on said second chamber to vary the position of the discharge opening relative to said agitating fins on said mixing plate for varying the mixing operation of the mixing apparatus. Accordingly, Applicant respectfully requests that the dependent claims be passed to allowance with the independent claims from which they depend.

For the reasons given above, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

4. The Final Office Action has rejected Claims 6 – 7 and 35 – 39 under the provisions of 35 U. S. C. §103(a) as being unpatentable over Williams in view of U. S. Patent No. 5,322,357 (Mazer). The Final Office Action states that Mazer adds to the base teachings of Williams that the impeller could be formed with fins at the periphery. This rejection is respectfully traversed.

Applicants respectfully submit that Mazer adds nothing to the teachings of Williams to meet the specific limitations of amended independent Claims 1, 10 and 33, or of newly presents independent Claims 40 and 46. Since Claims 6, 7 and 35 – 39, as well as the claims dependent on Claims 40 and 46, provide limitations of varying scope to the invention defined in the respective independent Claims and, thus, should be allowable with the allowance of the independent claim from which they depend.

For these reasons given above, Applicant respectfully submits that the cited Williams/Mazer combination cannot meet or make obvious the invention as defined in independent Claims 1, 10, 33, 40 and 46 and, thus, requests that this rejection be reconsidered and withdrawn.

5. The Final Office Action has rejected Claims 6 – 7 and 35 – 39 under the provisions of 35 U. S. C. §103(a) as being unpatentable over Williams in view of U. S. Patent No. 4,822,482 (Hollingsworth). The Final Office Action states that Hollingsworth adds to the base teachings of Williams that the discharge opening could be formed with a sliding valve element to control the amount of slurry discharged from the mixing chamber. This rejection is respectfully traversed.

Applicants respectfully submit that Hollingsworth adds nothing to the teachings of Williams to meet the specific limitations of amended independent Claims 1, 10 and 33, or of newly presents independent Claims 40 and 46. Since Claims 6, 7 and 35 – 39, as well as the claims dependent on Claims 40 and 46, provide limitations of varying scope to the invention defined in the respective independent Claims and, thus, should be allowable with the allowance of the independent claim from which they depend.

For these reasons given above, Applicant respectfully submits that the cited Williams/Hollingsworth combination cannot meet or make obvious the invention as defined in independent Claims 1, 10, 33, 40 and 46 and, thus, requests that this rejection be reconsidered and withdrawn.

6. Applicant respectfully submits that the addition of Claims 40 – 53 to the application does not require any addition filing fees. With the cancellation of the method Claims 17 – 32 from the application, a total of 16 claims, 2 of which were independent, were canceled from the application. Furthermore, the cancellation of Claim 11 from the application adds a 17th total claim canceled from the application. The addition of Claims 40 – 53 presents a total of 14 new claims, 2 of which are independent. Accordingly, these newly submitted claims are covered

by the original filing fee. After the amendment to the claims made above, Applicant is presenting a total of 37 claims, including 5 independent claims, for examination. The original filing fee corresponded to the filing of a total of 39 claims, including 5 independent claims.

7. In summary, Claims 1 – 3, 9, 10, 12, 16 and 33 – 35 have been amended, Claims 11 and 17 – 32 have been canceled, Claims 40 – 53 have been added, and Claims 1 – 10, 12 – 16, and 33 – 53 remain in the application. Applicant believes that the claims are allowable based on the foregoing amendments. Applicant respectfully requests that all rejections and objections be reconsidered and withdrawn and that all claims remaining in this case be allowed.

Pursuant to currently recommended Patent Office practice, the Examiner is expressly authorized to call the undersigned attorney if in his judgment disposition of this application could be expedited or if he considers the case ready for final disposition by other than allowance.

Respectfully submitted,

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